

adding one or more objects to a hierarchy by defining parent-child relationships for the one or more objects;

generate a parallel representation of the scene graph by:

determining whether a data structure corresponding to the one or more object types already exist;

if a corresponding data structure does not already exist, create a new data structure corresponding to the type of object;

if a corresponding data structure does already exist, create a new entry in the corresponding data structure;

create at least one thread configured to process each data structure; and

render the scene graph by executing at least a subset of the threads.

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2. (Amended) The electronic medium of claim 1, wherein the data structures provide a parallel context from which to access the objects in the scene graph.
3. (Amended) The electronic medium of claim 1, wherein the data structures provide alternate access to data from the objects in the scene graph.
4. (Amended) The electronic medium of claim 1, wherein the data structures provide an alternate ordering of information in the scene graph.
5. (Amended) The electronic medium of claim 1, wherein the entries in the data structures comprise pointers to the data in the scene graph.
6. (Amended) The electronic medium of claim 1, wherein at least a subset of the entries in the data structures are copies of the data in the scene graph.
7. (Amended) The electronic medium of claim 1, wherein the objects in the scene graph comprise object data, wherein the entries in the data structures comprise pointers to the object data.

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8. (Amended) The electronic medium of claim 1, wherein the entries in the data structures comprise pointers to objects in the scene graph.

9. (Amended) The electronic medium of claim 1, wherein said adding one or more objects to a hierarchy by defining parent-child relationships for the one or more objects comprises inserting a pointer to an object in the hierarchy.

10. (Amended) The electronic medium of claim 1, further comprising generating one or more threads for each data structure, wherein the threads operate on the data structures.

11. (Amended) The electronic medium of claim 1, further comprising generating one or more threads for each data structure, wherein the threads operate on the data structures.

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28. (Amended) An electronic medium comprising a computer program, wherein the computer program is configured to:

create a scene graph by:

- adding a first object to a hierarchy;
- adding a second object to the hierarchy;
- defining a parent-child relationship between the first and second objects;

creating a plurality of data structures and threads, wherein each data structure corresponds to a particular type of object in the hierarchy, wherein each object in the hierarchy has an entry in at least one of the data structures, and wherein each thread is configured to execute one of the data structures; and

rendering the scene graph by executing the threads in lieu of traversing the scene graph.

29. (Amended) The electronic medium of claim 28, wherein each data structure has a corresponding update thread configured to update the data structure.

30. (Amended) The electronic medium of claim 28, wherein the scene graph includes behavior data for the objects.

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31. (Amended) The electronic medium of claim 28, wherein the scene graph includes environmental data.

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32. (Amended) The electronic medium of claim 28, wherein the scene graph includes lighting and fog information

33. (Amended) The electronic medium of claim 28, wherein the program is configured to optimize the scene graph before creating the plurality of data structures and the threads.

34. (Amended) The electronic medium of claim 28, wherein the program is configured to optimize the data structures by stripifying geometry data in the data structure.

35. (Amended) The electronic medium of claim 28, wherein the program is configured to optimize the data structures by splitting nodes in the data structures.

36. (Amended) The electronic medium of claim 28, wherein the program is configured to optimize the data structures by flattening the scene graph before creating the plurality of data structures and the threads.